

IN THE CLAIMS:

On page 16, in line 1, cancel "Patent Claims" substitute ~~WE CLAIM AS~~

OUR INVENTION: - therefor.

Please cancel claims 1-15.

5 Please add the following new claims 16-30:

16. A high voltage resistant edge structure in an edge region of a semiconductor component, said edge structure comprising:

a semiconductor body having at least one inner zone of a first conductivity type adjacent to a first surface of said semiconductor body;

at least one floating guard ring of a second conductivity type arranged in said inner zone; and

inter-ring zones of said first conductivity type respectively arranged in said inner zone, said inter-ring zones being allocated in pairs to each of said floating guard rings, said inter-ring zones being arranged laterally such that they separate two respective consecutive floating guard rings from one another,

wherein at least one of said floating guard rings and said inter-ring zones have at least one of conductivities and geometries set such that their free charge carriers are totally depleted when a blocking voltage is applied;

17. The high voltage resistant edge structure as claimed in claim 16, wherein at least one of a width of said inter-ring zones increases in a direction of said semiconductor component and a width of said floating guard rings decreases in a direction of an edge of said semiconductor component.

18. The high voltage resistant edge structure as claimed in claim 16, wherein at least one of said floating guard rings and said inter-ring zones respectively comprise a same width.

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19. The high voltage resistant edge structure as claimed in claim 16, wherein a depth of said floating guard rings decreases in a direction of an edge of said semiconductor component.

20. The high voltage resistant edge structure as claimed in claim 16, wherein said floating guard rings have one of a U-shaped or V-shaped cross-section.

21. The high voltage resistant edge structure as claimed in claim 16, further comprising:

at least one space charge zone stopper located at an outermost edge of said edge region of said semiconductor component.

22. The high voltage resistant edge structure as claimed in claim 21, wherein said space charge zone stopper comprises a heavily doped region of said first conductivity type, said heavily doped region being arranged in said inner zone.

23. The high voltage resistant edge structure as claimed in claim 21, wherein said space charge zone stopper comprises a damage implanted region being arranged in said inner zone.

24. The high voltage resistant edge structure edge as claimed in claim 21, wherein said space charge zone stopper comprises an electrode connected to said inner zone, said electrode being one of metallic or containing polysilicon.

25. The high voltage resistant edge structure as claimed in claim 16, further comprising:
at least one magnetoresistor located at an inner edge of said edge region of said semiconductor component.

26. The high voltage resistant edge structure as claimed in claim 25, wherein at least one of said magnetoresistors is simultaneously a gate electrode of said semiconductor component.

27. The high voltage resistant edge structure as claimed in claim 25, wherein at least an outermost of said magnetoresistors is nearly completely enclosed by a cathode metallization in a direction of said first surface of said semiconductor component.

28. The high voltage resistant edge structure as claimed in claim 27, wherein said cathode metallization is a metallization of a source electrode of said semiconductor component.

29. The high voltage resistant edge structure as claimed in claim 16, wherein said inter-ring zones in said edge region have a cross-section tapered to said first surface.

30. The high voltage resistant edge structure as claimed in claim 16, wherein said semiconductor component is one of a vertical power transistor or an IGBT.

IN THE ABSTRACT:

On page 19, cancel lines 1-3, insert the following centered heading at line

1:

--ABSTRACT OF THE DISCLOSURE--;

in line 5, cancel "The invention relates to a" substitute --A-- therefor;

in line 6, cancel "the" substitute --a-- therefor;

in line 7, after "of" cancel "the" substitute --a-- therefor;

cancel line